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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/588,353	06/07/2000	Tetsuya Minakami	SON -469 US	8798

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EXAMINER	
GENCO, BRIAN C	

ART UNIT	PAPER NUMBER
2615	9

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/588,353	MINAKAMI, TETSUYA	
	Examiner	Art Unit	
	Brian C Genco	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6-8* is/are allowed.

6)☒ Claim(s) *4 and 5* is/are rejected.

7)☒ Claim(s) *9 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Examination of this application has been given to a new Examiner.

Applicant argues are moot in view of new grounds of rejection of claims 4 and 5 and notice of allowance of claims 6-8 presented herein bellow.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over The Applicant's Admitted Prior Art in view of Maenaka et al (US Patent No- 5555023).

Regarding claim 4, The Applicant's Admitted Prior Art discloses an edge correction apparatus for a digital video camera comprising the following limitations of claim 4 (see applicant's figure 1 labeled "Prior Art"):

- A horizontal edge signal generator and a vertical edge signal generator for respectively generating horizontal and vertical edge correction signals in horizontal and vertical directions of a sensed image obtained via an image sensing element of a digital video camera (e.g., Fig. 1).
- A horizontal edge signal gain controller and a vertical edge signal gain controller for controlling gains of the horizontal and vertical edge correction signals respectively from the horizontal edge signal generator and the vertical edge signal generator (e.g., Fig. 1).
- An adder for adding the horizontal and vertical edge correction signals whose gains are controlled by the horizontal edge signal gain controller and the vertical edge signal gain controller (e.g., Fig. 1).

• A slice processor for adding, to an image processing signal of the digital video camera, an edge correction signal obtained by performing slice processing for an edge signal output from the adder (e.g., Fig. 1).

• A horizontal difference signal is a signal corresponding to a pixel value less a weighted sum of an output difference between horizontally adjacent pixels on opposite horizontal sides of said pixel that is output from said horizontal edge signal generator and a difference between digital video camera CCD outputs signals vertically adjacent on opposite vertical sides of said pixel (e.g. the horizontal edge signal generated in the horizontal edge signal generator is a horizontal difference signal. See equations 6-9).

The Applicant's Admitted Prior Art does not disclose a vertical edge component suppression position detector for causing the vertical edge signal gain controller to execute gain control of the vertical edge correction signal in accordance with a horizontal difference signal output from the horizontal edge signal generator.

Maenaka disclose a signal processing circuit for a digital video camera that prevents a false aperture signal being generated. Specifically, Maenaka detects a horizontal (Sh) and vertical (Sv) correlation value on the basis of a signal from the image sensing device and a mixing ratio (gain) of the vertical and horizontal aperture signal is controlled on the basis of the correlation values (Maenaka et al, column 4, lines 14-24). Coefficient Kl, that is applied to the vertical aperture signal (Vap) is determined using the equation Kl =Sv/(Sh+Sv). This teaches that if the horizontal correlation is weaker than the vertical correlation, then Kl becomes small and the vertical aperture signal is attenuated, that is if Sh>Sv, then Kl decreases (Maenaka et al figure 1, column 5, equation 5, lines 37-40). Therefore the vertical aperture correction signal (Vap) is controlled in accordance with the horizontal aperture signal (Sh). Examiner notes that the

aperture signals of Maenaka correspond to the edge signals of AAPA. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized Maenaka's gain control method in order to prevent a false edge signal from being generated.

Note that the horizontal difference signals are generated in accordance with green pixel values, then the horizontal difference signal is a signal corresponding to a luminance difference because the luminance signal is generated using majority green pixel signals as is well known in the art.

In regards to claim 5 see Examiners notes on the rejection of claim 4.

Allowable Subject Matter

Claims 9 and 10 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See Examiners notes on the reasons for allowance in Paper No. 6.

Claims 6-8 are deemed allowable over the prior art of record, the reasons for allowance are as follows:

In regards to claim 6 the prior art of record does not disclose nor fairly suggest an edge correction apparatus for a digital video camera, comprising a horizontal edge signal generator and a vertical edge signal generator for respectively generating horizontal and vertical edge correction signals in horizontal and vertical directions of a sensed image obtained via an image sensing element of a digital video camera, a horizontal edge signal gain controller and a vertical edge signal gain controller for controlling gains of the horizontal and vertical edge correction signals respectively from the horizontal edge signal generator and the vertical edge signal generator, an adder for adding the horizontal and vertical edge correction signals whose gains are

controlled by the horizontal edge signal gain controller and the vertical edge signal gain controller, a slice processor for adding, to an image processing signal of the digital video camera, an edge correction signal obtained by performing slice processing for an edge signal output from the adder, a vertical edge component suppression position detector for causing said vertical edge signal gain controller to execute gain control of the vertical edge correction signal in accordance with a horizontal difference signal output from said horizontal edge signal generator, wherein gain control of the vertical edge correction signal by said vertical edge signal gain controller is executed when an amplitude of the horizontal difference signal exceeds a set threshold which is greater than zero.

Claims 7 and 8 have substantially similar reasons for allowance.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Friday 8:30am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 703-308-4357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian C Genco
Examiner
Art Unit 2615

May 14, 2004

ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600